

CLAIM AMENDMENTS AND STATUS

1. (currently amended) An optical communications device for selectively modifying a multiwavelength optical beam having a selected polarization with a given center wavelength and edge wavelengths, while compensating for nonlinearities at the edge wavelengths which affect data reliability, comprising: a voltage controlled liquid crystal cell functioning as an optical modulator receiving the optical beam and introducing a selectively controllable amount of retardation in the beam; and at least three two retardation compensators in the path of the beam prior to the optical modulator, the at least three two retardation compensators comprising at least one optical half wave quartz wave plate at the center wavelength, at least one nominally quarter wave plate that is identically equal to a quarter wave at the center wavelength and a third quartz plate of less than a tenth wave at the center wavelength to compensate for the residual cell birefringence, said optical wave plates providing integer multiples of retardation selected in relation to the center wavelength and edge wavelengths of the optical beam and a retardation characteristic of the optical modulator, each said wave plate having selected optical axis dispositions relative to the polarization axis of the optical beam .

2-3. (cancelled)

4. (currently amended) A device as set forth in claim 1 3 above, wherein the device further comprises a polarizer in the optical path before the retardation compensators for assuring the direction of the polarization of the input beam, the axis of the liquid crystal cell is at a selected angle to the input beam polarization and the optical axis of the half

wave plate is at an angle of about 15 degrees to the optical axis of the nominally quarter wave plate.

5. (original) A device as set forth in claim 4 above, wherein the polarizer is a single element for transmitting an optical beam of preferred polarization.

6. (original) A device as set forth in claim 4 above, wherein the polarizer comprises at least one polarization beam displacer.

7. (currently amended) A device as set forth in claim 1 3 above wherein the device comprises an array including a multiplicity of aligned liquid crystal cells each having independent controls and the retardation compensators are in the path of each cell, and compensate for nonlinearities at the edge wavelengths.

8. (original) A device as set forth in claim 7 above wherein the wavelength band of interest is the C band with center wavelength of 1550 nm and edge wavelengths of 1530 nm and 1565 nm, and the device further comprises a system for diffractively separating a WDM input signal with separate wavelength signals.

9-23. (canceled)